

**AMENDMENTS TO THE ABSTRACT**

Please substitute the following paragraph for the abstract now appearing in the currently filed specification:

A control system for a catalytic combustion system on a gas turbine includes a flame preburner, a fuel injector positioned downstream of the preburner and a catalyst positioned downstream of the fuel injector. In such systems, a portion of the fuel combusts within the catalyst itself and the remainder of the fuel combusts in a homogeneous combustion process wave downstream of the catalyst. A sensor in communication with the control system monitors the homogeneous combustion process wave and adjusts the gas temperature at the catalyst inlet to a preferred value based on a predetermined schedule that relates the catalyst inlet gas temperature to operating fundamentals such as adiabatic combustion temperature or the gas turbine's exhaust gas temperature.